instructions for providing a user interface to the user at the user access point that interfaces the user with the network management system and that directs the user to select a connection bandwidth for the permanent virtual circuit between the switch and the user access point;

instructions for receiving at the network management system, through the user interface, a message indicative of a selected bandwidth from the user; and

instructions for remotely provisioning the switch with the network management system in response to receiving the message to throttle the network connection at the switch such that the connection bandwidth between the switch and the user access point is limited by the user selected bandwidth thereby allowing the user, from the user access point, to interface with the network management system and select a bandwidth that is, in turn, provisioned as the connection bandwidth between the switch and the user access point.

7. (Amended) A method for providing, to a user, a user interface to a network management system for configuring a network connection between a provider access point and a user access point over a network including a permanent virtual circuit between a switch and the user access point, the method further comprising:

establishing a graphical user interface to the user at the user access point that interfaces the user with the network management system;

directing the user, through the user interface, to select a connection bandwidth for the permanent virtual circuit between the switch and the user access point;

receiving at the network management system, through the user interface, a message indicative of a selected bandwidth from the user; and

remotely provisioning the switch with the network management system in response to receiving the message to throttle the network connection at the switch such that the connection bandwidth between the switch and the user access point is limited by the user selected bandwidth thereby allowing the user, from the user access point, to interface with the network management system and select a bandwidth that is, in turn, provisioned as the connection bandwidth between the switch and the user access point.

9. (Amended) The method of claim 7 further comprising:

authenticating the user prior to remotely provisioning the switch.

10. (Amended) The method of claim 7 wherein the network includes a plurality of subnets, each subnet having a corresponding element type and including at least one programmable element of that type, each element type having a corresponding element manager, the method further comprising:

determining a route made up of links over the network from the provider point to the user point, wherein a network-to-network link connects a pair of adjacent subnets having elements of different types and a network logical link provides a path across a subnet; and

establishing a connection across each subnet on the route by sending a request to the corresponding element manager to program the at least one subnet element in accordance with the network logical link across that subnet, and for establishing a network-to-network connection between adjacent subnets on the route in accordance with the network-to-network link between those adjacent subnets to provide the network connection between the provider point and the user point.